

# COMPRESSOR OF AN AIR CONDITIONER OF A CAR WITH CAPABILITY TO DISSIPATE HEAT PRODUCED BY ITSELF

## BACKGROUND OF THE INVENTION

### 1. Field of the invention

The present invention relates to a compressor of an air conditioner of an automobile with capability to dissipate heat of itself, more particularly one, of which a rotary wheel is formed with vent holes and blades, so that air flow rate increases to dissipate heat of the compressor more rapidly due to rotation of the rotary wheel when the compressor is working.

### 2. Brief Description of the Prior Art

Air conditioners of automobiles are equipped with compressors and other mechanisms, which cooperate to produce cool air.

Referring to Figs. 4, and 5, a conventional compressor of an automobile consists of a main body 1, an electromagnet 2, a rotary wheel 3, and a co-moving disk 4. The main body 1 has a connecting shaft 12 connected to inner parts (not shown) thereof, and a sleeve 11 fixedly disposed around the shaft 12. The electromagnet 2 is circular, and is fixedly disposed around the sleeve 11 on the main body 1. The rotary wheel 3 has a hole 31 on the middle, a bearing 32 fitted in the middle hole 31, and a circular trench 33 on an inward side thereof. The rotary

wheel 3 is turnably connected to the main body 1 with the bearing 32 being connected to the sleeve 11, and with the electromagnet 2 being received in the circular trench 33. The co-moving disk 4 can be attracted by magnets, and has a middle tube 41. The co-moving disk 4 is arranged next to the rotary wheel 3, and connected to the connecting shaft 11 of the main body 1 at the middle tube 41.

Referring to Figs. 4 to 6, a belt 51 is passed over the rotary wheel 3 and a rotary element of a motor 5. And, the motor 5, and the electromagnet 2 are powered so that the rotary wheel 3 is made to rotate by the motor 5, and the co-moving disk 4 is attracted onto the rotary wheel 3 by means of magnetic force of the electromagnet 2. Thus, the co-moving disk 4 rotates together with the wheel 3 to make the shaft 12 of the main body 1 to turn, and in turns, the compressor functions.

It can be seen that the above compressor is not equipped with any device for dissipating heat produced by it, and the heat is dissipated only by air that moves through the car when the car is driven. In other words, heat of the compressor can't be rapidly dissipated in case the compressor is working while people are resting in the car without driving.

## SUMMARY OF THE INVENTION

It is a main object of the present invention to provide a compressor of an air conditioner of an automobile, which can effectively dissipate

heat produced by it when it is working.

The compressor of the present invention has a rotary wheel, which is connected to a motor by means of a belt to pass on movement of the motor to other parts of the compressor, and which is formed with several vent holes near to the edge for allowing airflow caused by rotation of the wheel to pass onto a main body of the compressor, and blades next to respective ones of the vent holes thereof for increasing rate of flow of air through the vent holes onto the main body of the compressor.

#### BRIEF DESCRIPTION OF THE DRAWINGS

The invention will be better understood by referring to the accompanying drawings, wherein:

Fig. 1 is an exploded perspective view of the compressor of an air conditioner of an automobile according to the present invention,

Fig. 2 is a partial vertical section of the compressor of an air conditioner of an automobile according to the present invention,

Fig. 3 is a view of the compressor of the present invention functioning,

Fig. 4 is an exploded perspective view of the conventional compressor of an air conditioner of an automobile as described in the Background,

Fig. 5 is a partial vertical section of the conventional compressor, and

Fig. 6 is a view of the conventional compressor functioning.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to Figs. 1, and 2, a preferred embodiment of a compressor of an air conditioner of an automobile in the present invention includes a main body 1, an electromagnet 2, a rotary wheel 6, and a co-moving disk 4.

The main body 1 has a connecting shaft 12 connected to inner parts (not shown) thereof, and a sleeve 11 fixedly disposed around the shaft 12. The electromagnet 2 is circular, and is fixedly disposed around the sleeve 11 on the main body 1. The rotary wheel 6 has a hole 61 on the middle, a bearing 62 fitted in the middle hole 61. The rotary wheel 6 is arranged next to the electromagnet 2, and turnably connected to the main body 1 with the bearing 62 being connected to the sleeve 11. Furthermore, the rotary wheel 6 is formed with several sloping vent holes 63 near to the edge thereof, and blades 64 next to respective ones of the sloping vent holes 63.

The co-moving disk 4 can be attracted by magnets, and has a middle tube 41. The co-moving disk 4 is arranged next to the rotary wheel 6, and connected to the connecting shaft 11 of the main body 1 at

the middle tube 41.

Referring to Fig. 3, to use the compressor, a belt 51 is passed over the rotary wheel 6 and a rotary element of a motor 5. And, the motor 5, and the electromagnet 2 are powered so that the rotary wheel 6 is made to rotate by means of the motor 5, and the co-moving disk 4 is attracted onto the rotary wheel 3 by means of magnetic force of the electromagnet 2. Consequently, the co-moving disk 4 rotates together with the wheel 6 to make the shaft 12 of the main body 1 to turn, and in turns, the compressor functions. And, increased proportion of airflow that is caused by rotation of the wheel 6 can pass onto the main body 1 due to the vent holes 63; thus, heat of the main body 1 can be rapidly dissipated. In addition, more air is made to flow through the vent holes 63 of the rotary wheel 6 onto the main body 1 by means of the blades 64, and in turns, heat produced by the main body 1 can be dissipated still more rapidly.

From the above description, it can be easily understood that the compressor of the present invention has advantages as followings:

1. Airflow caused by rotation of the wheel 6 is allowed to pass onto the main body 1 at larger proportion due to the vent holes 63. Therefore, heat of the main body 1 can be dissipated rapidly.
2. The rate of flow of air through the vent holes 63 of the rotary wheel 6 onto the main body 1 is increased by means of the blades 64 therefore heat produced by the main body 1 can be dissipated still more rapidly.